
7. BOAT WASHING BMPS

TARGET POLLUTANTS

This section addresses pollutants associated with antifouling paint; cleaning agents such as detergents, solvents, and degreasing agents; residues resulting from paint and varnish removal; and sediments resulting from washing boats.

Boat bottom paints contain metal compounds that are toxic to marine life, and the removal of these paints from the bottom of a boat produces a waste product which can harm the environment. It is illegal to discharge these substances to surface waters or land.

Contain and Properly Dispose of Pressure and Steam Cleaning Residues.

Removing bottom paint or cleaning hulls with a high pressure water or with a low pressure hose and a scrubber or scraper produces "industrial wastewater." To contain and control this wastewater, provide clearly marked designated work areas for land-side vessel maintenance, including cleaning. These activities should be conducted over an impermeable surface such as sealed asphalt or cement (not over open ground). The asphalt or cement should have a retaining berm and be pitched to contain the water.

The wastewater may be recycled or disposed of, but prior to disposal, it should be treated to reduce the concentration levels of heavy metals (principally copper) and meet the standards for disposal. This water may not be discharged to the ground, surface waters, septic systems, or storm sewers. Storm drain catch basins should be marked to warn marina users against such dumping. Do not discharge liquid wastes, including (but not limited to) solvents, detergents, and rinsewater onto the ground, or allow them to enter storm drains. Do not dispose of liquid wastes in dumpsters.

Some washing wastewater may be disposed of in a sanitary sewer. If detergents or solvents are not used, a properly sized grease trap/oil and water separator connected to a sanitary sewer should provide adequate treatment if properly maintained to allow the effluent to meet sewer standards. Tanks used to collect wastewater and remove solids are considered process tanks, and paint solids classified as hazardous must be separated and removed from these tanks by a licensed hauler.

Wash Boat Hulls Above the Waterline. Instead of washing the topsides of boats with a pressure washer, consider cleaning boat hulls above the waterline by hand. This practice will decrease the amount of water necessary to complete the job and will reduce the amount of potential contaminants that can enter the water. When washing boats by hand, do so in a way that minimizes the amount of debris that falls into the water.

Boats should be removed from the water before being cleaned or maintained if the impacts of these activities cannot be contained or mitigated. For instance, if toxic chemicals are being applied during maintenance and those chemicals are

apt to enter the surface water, move the boat to a designated maintenance area ashore. However, if a vessel is being cleaned with nontoxic detergents, then removing the boat from the water may not be necessary.

Support The Use Of Environmentally Compatible Cleaning Products.

Encourage boaters to use only cleaning products that will not degrade the environment. At a minimum, avoid and discourage the use of solvents and other toxic cleaning agents such as ammonia, sodium hypochlorite, chlorinated solvents, petroleum distillates, acids, and lye, and bleach. Soaps containing phosphates are illegal in Maine, and alternatives should be used for cleaning boats and equipment. Solutions of vinegar and water and citric acid compounds are effective cleaning agents. Promote the use of biodegradable chemical counterparts to traditional chemicals commonly found on board vessels. Ensure that your ship's store has "green" products available, and help employees understand and be able to explain the differences between traditional and environmentally friendly products.

Minimize the impacts of wastewater created during pressure washing.

During pressure-washing, bottom growth consisting of marine organisms is washed off the hull along with particles of the bottom paint and fragments of hull material. Following is a list of ways to minimize water quality degradation from pressure washing.

- Pressure washing wastewater should be contained by directing it to a holding tank or silt trap to prevent paint chips and oil from being discharged to natural waters and storm drains. If the wastewater does not contain chemical additives, it may be diverted into wetpond detention basins or another stormwater BMP.
- Cleaning processes that use chemical additives such as solvents or degreasers must be conducted in self-contained systems that prevent discharge to storm drains or sanitary sewers.
- Wastewater from washing operations can be collected and reused.
- Permission may be required to discharge these wastes to the local municipal sanitary sewer system. Pretreatment may be required.

Removing contaminants from wastewater can be achieved by several processes, depending on the amount of pollutant removal desired or required.

Settling: This process allows the contaminants to drop out of the wastewater once it is collected and allowed to stand undisturbed. It requires a platform that will collect the water during the washing process and a containment facility. This method is the least expensive and the easiest to design and construct. However, it is only moderately effective at removing contaminants because it will only remove particles that drop out during settling.

Filtration: Filter washwater by allowing the water to flow through one or more filters that screen out different size particles. Filtration can start at the washing platform with the installation of hay bales or filtration cloth over the wash water intake drain. This method is effective for straining visible particles. Additional filtration can be accomplished by forcing the water through a filter. Such treatment systems can remove more than 90% of the suspended solids and 80% of most toxic metals associated with hull pressure-washing.

Treatment: This method uses existing technologies from other industries to pretreat the wastewater and remove contaminants. This method operates under the same premise as a mini-treatment plant. The treatment can include the removal of oil and grease, metals, or other contaminants, depending on the technology applied. For instance, agents can be introduced into the wastewater that encapsulate metals and force them to settle out of the water. This method is the most sophisticated level of wastewater treatment.

Discharge: Once the wastewater has moved through the purification process, the marina operator must then decide either to:

- a. discharge the wastewater into the water body;
- b. discharge to a sanitary sewer system; or
- c. collect the water for recycling in the pressure washing loop or for other applications, such as irrigation.

If option (a) or (b) is chosen, the discharged effluent will be required to meet discharge standards set for the receiving waterbody or sewage treatment facility. Either option will require discharge permits and water quality monitoring. The final option, reuse, may be the most appropriate practice. It would reduce the volume of water ultimately discharged and conserve water.

Appendix B is a design for a boat washing treatment system. This system should meet the requirements for a NPDES permit. It consists of a collection sump and filtration units for treating washwater. Clean water can then be discharged to either an infiltration bed or to a stormwater runoff ditch.

